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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,733	08/07/2001	Masatsugu Hirayama	016907/1249	1273

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EXAMINER	
DIVINE, LUCAS	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,733	HIRAYAMA, MASATSUGU	
	Examiner	Art Unit	
	Lucas Divine	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *07 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,7,8,10 and 11* is/are rejected.

7)☒ Claim(s) *3,6,9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/7/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. Preliminary Amendment to specification and drawings received on 11/26/01 is accepted.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US 6744921) in view of Yamamoto et al. (US 5799139) hereafter as Uchida and Yamamoto.

Regarding claim 7, Uchida teaches **an image forming apparatus** (Fig. 1 shows the complete system, with further drawings explaining details) **comprising:**

image readout means (scanner 201) **for reading three primary colors of colors for each pixel of a manuscript image** (col. 3 lines 34-50);

a color converting section (107 as shown in Fig. 6) **that converts the three primary colors of colors read out by the image readout means into plural types of color data related to complementary colors** (col. 6 lines 45-49);

a region identifying section that identifies a region of each pixel based on the three primary colors of the colors supplied for each pixel of the manuscript image (Fig. 6 ref. no. 114, wherein the zone/fch outputs leave the section which identify whether a pixel is part of a image or character region);

a storage section that stores a filter coefficient that consists of a basic coefficient and a differential coefficient (LUT table 117 as shown in Figs. 26A and B show selecting filter coefficients that are stored in the filter unit 111 based on the filter output signal - 2 for smoothing [basic for images] and 2 for sharpening [differential for edges of characters], one coefficient for each filter in the special filter 111; col. 13 lines 24-34) **for each value of sharpness setting** (different coefficients selected for each sharpness setting; col. 12 lines 36-37);

a generating section (must be included in space filter processing unit 111 in order to complete the filtering because for each pixel input, a filter output is sent from LUT 117, and plural [2] 5x5 matrix filters are generated based on the coefficients that are indicated by the filter signal; col. 13 lines 24-34) **that reads out from the storage section a filter coefficient** (col. 13 line 28, wherein the filter coefficients are provided) **and generates plural types** (smoothing/sharpening types) **of matrix shaped filters that corresponds to a region identified by the region identifying section according to the read out filter coefficient** (2 filters are generated for each pixel based on coefficients, and the coefficients are determined by the region

identifying section 114 as shown in Fig. 26A, wherein the zone input affects the output of the LUT which sends a coefficient selection signal [filter, discussed in col. 12 lines 36-38]);

a selecting section that selects one of plural types of matrix shaped filters generated by the generating section according to the identification result from the region identifying section (Figs. 26A and B show the selecting tables for selecting different coefficients based on the result of a character/dot image etc..; col. 12 lines 55-59, by selecting outputs that instruct the filter how to operate, the tables select one of a plural number of filter possibilities and since filtering is completed by matrices, the selecting tables thereby select a filter matrix based on the matrix possibilities);

a filter section (Fig. 6 special filter 111; col. 7 lines 1-4) **that subjects color data acquired from the color converting section** (CYMK data arrives via pipeline) **to a filtering process by using the matrix shaped filter** (the 5x5 matrix filters are used; col. 13 lines 24-34); **and**

image forming means for forming an image on an image forming medium based on color data outputted from the filter section (printer 212a, which takes in color data from the filter 111 shown in Fig. 6).

While Uchida teaches selecting various types of sharpening (col. 12 lines 36-37) and teaches a copying device (Fig. 1) which is known to have an operator panel, Uchida does not specifically teach using a copier operator panel to select sharpness setting that is used in the processing of a scanned document.

Yamamoto teaches **a setting section that sets a value of sharpness setting** (Fig.5 shows the sharpening screen on an operation panel of operation portion of copier 9 that has a setting

button 33 for sharpness) used in the processing of a scanned document (Fig 7 ref no. 154 teaches a sharpness adjusting circuit that has differentiating and integrating filters for different types of regions; col. 10 lines 20-22).

It would have been obvious to one of ordinary skill in the art to place a sharpness setting operation available to a user of a copying device as taught in Yamamoto, and thus it would have been obvious to place the same on Uchida. The motivation for doing so would have been to allow the user to have control over the final output of an image document, thus providing the user with a better output than if the option were not available.

Regarding claim 8, which depends from claim 7, Uchida further teaches the **three primary colors of the color is red (R), green (G), and blue (B), and plural types of color data are cyan (C), magenta (M), yellow (Y), and black (K)** (see Fig. 6, where RGB is inputted to converting units 108, 108, and 109 and CMYK are outputted).

Regarding claim 1, the apparatus elements of claim 7 include all of the apparatus elements of claim 1. Therefore, claim 1 is rejected as unpatentable for the same reasons as stated in the rejection of apparatus claim 7 above.

Regarding claim 2, which depends from claim 1, arguments analogous to those of rejected apparatus claim 8 are applicable to claim 2.

Regarding claim 4, the apparatus elements of claim 1 perform all of the method steps of method claim 4. Thus method claim 4 is rejected for the reasons stated in the rejection of apparatus claim 1.

Regarding claim 5, which depends from claim 4, the apparatus elements of claim 2 perform all of the method steps of method claim 5. Thus method claim 5 is rejected for the reasons stated in the rejection of apparatus claim 2.

Regarding claim 10, Uchida teaches **an image processing apparatus** (Fig. 1 shows the complete system, with further drawings explaining details) **comprising:**

a converting section (image scanner 20) **that converts each input pixels of two-dimensional images in a main scanning direction and a sub-scanning direction** (CCDs scan in the main and sub-scanning directions; col. 4 lines 27-29) **each into an image density signal** (RGB data is outputted from CCDs; col. 4 lines 43-47);

an identifying section that identifies a character region or a photograph region and the like based on an image density signal in units of these target pixels from these converting sections (character thickness unit 114 [shown in Fig. 6 and 14] has character/halftone detector 2013 that detects character regions and a screed dot area detector which detects screened dot images and photographic images [col. 11 lines 34-35]);

a storage section that stores a filter coefficient that consists of a basic coefficient and a differential coefficient (LUT table 117 as shown in Figs. 26A and B show selecting filter coefficients that are stored in the filter unit 111 based on the filter output signal - 2 for smoothing [basic for images] and 2 for sharpening [differential for edges of characters], one coefficient for each filter in the special filter 111; col. 13 lines 24-34) **for each value of sharpness setting** (different coefficients selected for each sharpness setting; col. 12 lines 36-37);

a generating section (must be included in space filter processing unit 111 in order to complete the filtering because for each pixel input, a filter output is sent from LUT 117, and plural [2] 5x5 matrix filters are generated based on the coefficients that are indicated by the filter signal; col. 13 lines 24-34) **that reads out from the storage section a filter coefficient** (col. 13 line 28, wherein the filter coefficients are provided) **and generates plural types** (smoothing/sharpening types) **of matrix shaped filters that corresponds to a region identified by the region identifying section according to the read out filter coefficient** (2 filters are generated for each pixel based on coefficients, and the coefficients are determined by the region identifying section 114 as shown in Fig. 26A, wherein the zone input affects the output of the LUT which sends a coefficient selection signal [filter, discussed in col. 12 lines 36-38]);

a selecting section that selects a respective one of plural types of matrix shaped filters generated by the generating section according to the identification results from the identifying section (Figs. 26A and B show the selecting tables for selecting different coefficients based on the result of a character/dot image etc..; col. 12 lines 55-59, by selecting outputs that instruct the filter how to operate, the tables select one of a plural number of filter possibilities and since filtering is completed by matrices, the selecting tables thereby select a filter matrix based on the matrix possibilities); **and**

a correcting section (space filter processing unit 111, which inputs and outputs 4 color values one for each color in that color's coordinate system) **that correct an image density signal of each of the variety of colors from the converting section by using a filter value in the corresponding coordinate system of the filter selected by the selecting section** (in order

to properly filter the colors for the printer 212a, the filter unit must filter in the corresponding coordinate system).

While Uchida teaches selecting various types of sharpening (col. 12 lines 36-37) and teaches a copying device (Fig. 1) which is known to have an operator panel, Uchida does not specifically teach using a copier operator panel to select sharpness setting that is used in the processing of a scanned document.

Yamamoto teaches **a setting section that sets a value of sharpness setting** (Fig.5 shows the sharpening screen on an operation panel of operation portion of copier 9 that has a setting button 33 for sharpness) used in the processing of a scanned document (Fig 7 ref no. 154 teaches a sharpness adjusting circuit that has differentiating and integrating filters for different types of regions; col. 10 lines 20-22).

It would have been obvious to one of ordinary skill in the art to place a sharpness setting operation available to a user of a copying device as taught in Yamamoto, and thus it would have been obvious to place the same on Uchida. The motivation for doing so would have been to allow the user to have control over the final output of an image document, thus providing the user with a better output than if the option were not available.

Regarding claim 11, Uchida teaches **an image processing apparatus** (Fig. 1 shows the complete system, with further drawings explaining details) **comprising:**

plural converting sections (image scanner 201 has plural CCDs) **that convert each input pixels of two-dimensional images in a main scanning direction and a sub-scanning direction** (CCDs scan in the main and sub-scanning directions; col. 4 lines 27-29) **each into an**

image density signal of a respective one of a variety of colors (RGB data is outputted from CCDs; col. 4 lines 43-47);

an identifying section that identifies a character region or a photograph region and the like based on an image density signal in units of these target pixels from these converting sections (character thickness unit 114 [shown in Fig. 6 and 14] has character/halftone detector 2013 that detects character regions and a screed dot area detector which detects screened dot images and photographic images [col. 11 lines 34-35]);

a storage section that stores a filter coefficient that consists of a basic coefficient and a differential coefficient (LUT table 117 as shown in Figs. 26A and B show selecting filter coefficients that are stored in the filter unit 111 based on the filter output signal - 2 for smoothing [basic for images] and 2 for sharpening [differential for edges of characters], one coefficient for each filter in the special filter 111; col. 13 lines 24-34) **for each value of sharpness setting** (different coefficients selected for each sharpness setting; col. 12 lines 36-37);

plural generating sections (plural generating sections are implied to be included in space filter processing unit 111 in order to complete the filtering because for each pixel input, a filter output is sent from LUT 117, and plural [2] 5x5 matrix filters are generated based on the coefficients that are indicated by the filter signal, therefore plural generating sections are implied; col. 13 lines 24-34) **that read out from the storage section the filter coefficient** (col. 13 line 28, wherein the filter coefficients are provided)**, and generate plural types** (smoothing/sharpening types) **of matrix shaped filters that correspond to the identification results obtained by the identifying section by a respective one of a variety of colors according to this readout filter coefficient** (2 filters are generated for each pixel based on

coefficients, and the coefficients are determined by the region identifying section 114 as shown in Fig. 26A, wherein the zone input affects the output of the LUT which sends a coefficient selection signal [filter, discussed in col. 12 lines 36-38]);

a selecting section that selects a respective one of plural types of matrix shaped filters generated by the generating section according to the identification results from the identifying section (Figs. 26A and B show the selecting tables for selecting different coefficients based on the result of a character/dot image etc..; col. 12 lines 55-59, by selecting outputs that instruct the filter how to operate, the tables select one of a plural number of filter possibilities and since filtering is completed by matrices, the selecting tables thereby select a filter matrix based on the matrix possibilities); **and**

plural correcting sections (space filter processing unit 111, which inputs and outputs 4 color values, thereby implying 4 correcting sections, one for each color) **that correct an image density signal of each of the variety of colors from the converting section by using a filter value in the corresponding coordinate system of the filter selected by the selecting section** (in order to properly filter the colors for the printer 212a, the filter unit must filter in the corresponding coordinate system).

While Uchida teaches selecting various types of sharpening (col. 12 lines 36-37) and teaches a copying device (Fig. 1) which is known to have an operator panel, Uchida does not specifically teach using a copier operator panel to select sharpness setting that is used in the processing of a scanned document.

Yamamoto teaches **a setting section that sets a value of sharpness setting** (Fig.5 shows the sharpening screen on an operation panel of operation portion of copier 9 that has a setting

button 33 for sharpness) used in the processing of a scanned document (Fig 7 ref no. 154 teaches a sharpness adjusting circuit that has differentiating and integrating filters for different types of regions; col. 10 lines 20-22).

It would have been obvious to one of ordinary skill in the art to place a sharpness setting operation available to a user of a copying device as taught in Yamamoto, and thus it would have been obvious to place the same on Uchida. The motivation for doing so would have been to allow the user to have control over the final output of an image document, thus providing the user with a better output than if the option were not available.

Allowable Subject Matter

4. Claims 3, 6, and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arimoto et al. (US 6181819) and Yamagata et al. (US 6226397) teach image processing including further spatial filter specifics. Hayashi et al. (US 6049635) teaches a dotted image area detecting apparatus and dotted image area detecting method including character/picture judging that selects appropriate filters (Fig. 10). Fujita et al. (US 5659402) teaches image forming method and apparatus including an area separating unit and further differential and integrating filters based on the region judging.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 703-306-3440. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucas Divine
Examiner
Art Unit 2624

ljd

KING Y. POON
PRIMARY EXAMINER